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CENTRAL INTELLIGENCE AGENCY

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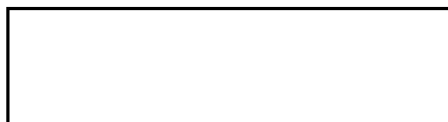
Telephone: [REDACTED]

14 December 1978

TO: Ms. Patty Chapman
Committee on Energy and Natural Resources
United States Senate
3106 Dirksen Senate Office Building

Dear Ms. Chapman:

Per your request to [REDACTED] for information on PEMEX, enclosed is a translation of an article from the Mexican newspaper El Dia. Also enclosed is a copy of the front page of the PEMEX annual report for 1977 which is available from the Library of Congress.



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MEXICO

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DIAZ DELIVERS PEMEX ANNUAL REPORT

Mexico City EL DIA in Spanish 19 Mar 78 p 8-10

[Text] Today, on the occasion of the 40th anniversary of the nationalization of the oil industry, it is with legitimate pride that I take this opportunity to report on the developments of the past year.

I am fulfilling this exalted duty at a very important junction, when two fundamental events are coming to a head: the economic crisis which we are in the process of overcoming, and the dynamic growth of our production and reserves.

The international situation is undergoing a drastic change in the concern over energy sources, and in particular over oil. Not only is oil a basic element in development, but it is also a decisive factor for stability and social survival.

At a time when Mexico, together with the rest of the world, is encountering difficulties in its economic and social life, our country is discovering extraordinary new accumulations of hydrocarbons. It must be stressed that this is the result of long years of study and effort on the part of able technicians and Mexican workers.

We are celebrating the 40th anniversary of a transcendental success in Mexico's history: the nationalization of the oil, a dramatic achievement of a great leader and of a great people, an extraordinary feat brought to a good end by those who were able to overcome adversity and develop an industry which has gone from promising hope to vigorous reality.

Somehow, there are praises that cannot match the accomplishments: this is how we feel when we recall one event: the expropriation of the oil industry. Let us render tribute to the man who took the decisive step, Gen Lazaro Cardenas.

There are also grateful acknowledgments which do not seem to correspond to the magnitude of the act. This is true when we evaluate what was accomplished by the oil technicians and workers of both yesterday and today.

The extraordinary developments which changed the face of the oil industry and contributed to the shaping of a better future for Mexico are due to the capability and the efforts of these esteemed Mexicans.

The wise utilization of these new resources constituted a veritable challenge to all Mexicans.

Our country has had oil since the beginning of the century, and we are now discovering that we have abundant supplies; this is a new phenomenon for Mexico, and we must learn how to manage it. The presidential directive about learning the management of plenty has put all citizens, especially those responsible for administering public funds, on the alert: for the first time, our country can avail itself of its own resources and consequently, we must derive from our investment the greatest social advantage for the Mexican people.

Mexican oil will be for a time a key instrument that will endow the nation with ample resources. However, it is the nation, through its government and the wisdom of its people, which will fittingly manage the end product of our oil.

In the 1977 report published today and which has already been distributed to you, you will acquaint yourselves with the operations conducted throughout this year. I am now taking the liberty to refer to the major tasks and the most important results of this period.

Hydrocarbon Reserves

In the oil industry, reserves are both moving force and compass. Reserves determine the direction, the hierarchy and the rapidity of the operations.

On 31 December 1977, our proven reserves of crude oil, natural gas and liquids derived from gas rose to 16 billion barrels. Projected reserves amount to 31 billion additional barrels, and potential reserves, including the two previous categories, reach 120 billion barrels.

A minimum goal of exploration is to discover more than was extracted the previous year, to replace and increase our hydrocarbon wealth.

The 1977 increase in proven reserves, from 11.2 billion to 16 billion, amounted to 4.8 billion barrels, 9 times the volume of production, or the equivalent of the entire volume used in Mexico plus the volume of crude oil and other products which were exported.

Think of the gigantic, world-renowned Poza Rica field, which was sufficient to satisfy domestic needs for many years. The 4.8 billion barrels in proven 1977 reserves, added to production, are the equivalent of two oil-fields of Poza Rica magnitude.

According to the 1977 rhythm of production, proven reserves are sufficient to satisfy the demand for 30 years, even without the reserves now in the process of being created. In other words, our oil needs will be covered for the next three decades, provided consumption remains at the present level.

Present figures for proven reserves show that the development of the country's oil reserves is growing, and that the addition of probable volumes to proven reserves is taking place in important and accelerated fashion.

It should be pointed out that proven reserves before December 1976 amounted to 6.3 billion barrels, and that the increase to 16 billion in barely 13 months constitutes one of the century's most important economic phenomena for the country on a long-term basis.

This oil potential strengthens our country and demands the rethinking and study of a large part of our directions, our mechanisms and our goals. We do acknowledge that this gives rise to a series of delicate and thorny issues of national life, however, we believe that despite these risks, it is preferable to face problems generated by riches rather than those which inevitably accompany poverty.

Up to the present, Mexico's energy consumption has been, for the most part, based on hydrocarbons; in the future, besides the contribution of alternate sources of energy such as nuclear and hydroelectric sources, coal, etc.,-- which must be developed with the financial assistance of the oil industry-- the probable consumption of hydrocarbons until the end of the century is estimated to be significantly lower than the sum total of proven and probable reserves.

Based on our present knowledge of Mexico's subsoil, we can state that we are prospecting for and discovering the reserves that will be used by the next generations in the 21st century, given the fact that we already have located the oil Mexico will use during the present century.

Under present world conditions, most countries believe that a 14- or 15-year relation of proven reserves to annual production ensures the security of the country possessing such a relation, provided, of course, that production is higher than consumption and that the relation of proven reserves to production is not likely to decrease. This is the case for Mexico, with the exception that at present, we can count on 15 if not 30 years of reserves-to-production relation.

Both the exploration and the exploitation of oil are dynamic processes and must be conducted in such a way as to maintain or increase reserves at the same time that proven deposits are being exploited, in order to guarantee the relation between production and reserves over and above the minimum figures mentioned previously.

In spite of using the largest quantity of drilling equipment in our history, and despite the fact that the number of equipment pieces rose significantly during this last year, the actual number of probable deposits where wells have not been drilled as yet is much higher than present capacity to drill; in other words, we are fortunate in having a great deal of work ahead of us.

At this time, we estimate that the country's proven reserves at the end of the present 6-year period, in 1982, will amount to more than 30 billion barrels, and if consumption increases at the same rate, by 1982 we shall have an ample margin to satisfy domestic needs for a period of 48 years. If we augment this by an additional volume to comply with our export plans for this 6-year period, figures will be consistently higher than those advised by the most prudent of security margins.

We wish to emphasize that present oil and gas exploitation is conservative. Likewise, planned volumes to reach that level of production decided upon one year ago are assured. This production will also be a reduced operation in relation to the available volumes of reserves. A production plateau fundamentally consists in reaching a volume of 2.25 million barrels of crude oil and liquid derivatives of gas daily, before the end of the present administration.

In general, natural gas volumes obtained in large geographic areas tend to be of the same size as crude oil volumes, if we measure both types of hydrocarbons according to their equivalent energy-producing potential.

In Mexico, instead of producing crude oil and natural gas in equivalent quantities, only 35 percent of natural gas is produced in relation to crude oil volumes.

Natural gas has been a by-product of the world's petroleum resources development; however, it is fast becoming a product of equal importance, being more highly prized than crude oil itself.

In their search for oil, some countries have frequently located only natural gas and have sealed wells with cement, to be kept as future reserves. This has occurred in Mexico as well. Domestic needs and the new significance of natural gas the world over make it the second most important source of energy, with crude oil occupying first place.

By endowing natural gas with the importance it now deserves, a new instrument has been created, which is more powerful than hydroelectric or nuclear energy. Supplying the maximum amount of natural gas to the various markets increases considerably the possibility of future reserves of hydrocarbons in Mexico.

The nation's oil reserves have so far been estimated without regard to the possibility of secondary recuperation and also of tertiary recuperation. Technological progress and additional reserves will expand secondary and tertiary recuperation operations, a fact which will significantly increase oil reserves figures.

As our potential and proven reserves are indeed copious, we shall be able to ensure supplies for the next 15 years or more over a long period of time and be protected against any risks and contingencies. We shall be sheltered from scarcity long after the era of oil has ended around the world.

Going back to the Poza Rica oilfield mentioned previously, we may compare it in size to some of the deposits in the new Reforma area. The Poza Rica field occupies 130 square kilometers and its oil-soaked calcite has an average thickness of 70 meters. The Bermudez deposits occupy 150 square kilometers and have 450 meters of soaked calcite; this means that they are larger than Poza Rica, and that their oil-soaked calcite is six times thicker. The figure of 150 square kilometers is used only because exact measurements are still unavailable.

The known area of the Cactus field is 130 square kilometers, the same as Poza Rica; however, the average thickness of its soaked calcite is 425 meters, again six times thicker than Poza Rica.

The Agave field, the exact dimensions of which are still unknown, is quite large and we do know that in certain places the soaked calcite has a thickness of 1,200 meters. We have already had proof of the existence of seven more such areas, which are only included in small proportion in the proven reserves.

We mentioned previously that in the oil industry, reserves are a compass and a guide, and when, fortunately, they are as large as ours, the decision to export is not simply an option, it is a patriotic imperative which must be realized for the good of the country.

Were we to attempt to ensure our needs to excess, we would continue to be hounded by urgent economic problems that only a type of irrational avarice and technological primitivism would prevent us from solving. This is a sad statement to make, but it is possible to be reduced to the absurd position of drowning in a storm at sea in order to save lifejackets in preparation for future storms. Simply put, worldly goods must be used to remedy evils.

Nature has not endowed our country with too many alternatives. The alternative with which we Mexicans are faced today encompasses an important option: oil.

We either produce oil today, without further delays and puerile fears, using it immediately and to the limit of our forces and intelligence, in order to become truly self-sufficient and masters of our fate, or we shall soon bitterly regret not to have risen to the historic times through which we are living.

Exploration

The search for possible hydrocarbon deposits is not an easy or pleasant adventure. Our geologists, geophysicists, topographers and workers are crisscrossing the country, led by their special knowledge and experience, and through complex operations and technological developments, are delineating possible fields of action, the existence of which can be corroborated by the drill boring down more than 6 kilometers. The extraordinary discoveries which changed the dimensions of the oil industry and created the vision of a better Mexico are due to the superiority and the efforts of these worthy Mexicans.

New oil and natural gas fields are not discovered by chance; it is not as if a person goes for a walk and stumbles on a rock. The technology, experience and maturity of a vast reservoir of manpower have made possible this new era of hydrocarbon discovery in Mexico.

Basically, the goals of this exploratory activity have been channeled toward the continued discovery of larger reserves in the new known areas of land and sea and the prompt evaluation of the possibilities for oil deposits in other regions.

As a result of these operations, 26 new fields were discovered in 1977, 17 for oil and 9 for gas, as well as 4 extensions of oil fields already in operation.

The most important discoveries are the gas fields, Lampazos, Monclova and Ulua, the first in Nuevo Leon and the others in Coahuila. I am happy to report that all three are located in new provinces that do not belong to the number of those traditionally known as oil-producing; for the first time in the history of our industry, hydrocarbons are produced in commercial form outside the Gulf's capital plateau.

The Bombas field in Southern Baja California confirmed the possibility of the existence of hydrocarbons in the peninsula; however, it must be pointed out that it does not possess commercial value as yet.

The maritime fields Akal and Bacab were discovered in the continental shelf of the Gulf of Mexico in front of Campecha. These are two fields of considerable dimensions which are probably located in a Cretaceous shelf beginning at Cuenca del Papaloapan, going by the Reforma area and ending at the Sonda de Campeche, around the Yucatan peninsula.

The new Paredon, Cacho Lopez, Sunuapa, Ojiacaque, Giraldas, Artesa and Copano fields, located in the Chiapas and Tabasco areas, corroborate the large size of this district. They also confirm the high index of productivity per well because of the formidable section of Cretaceous and Jurassic rocks soaked to a depth of 1,500 meters, while the historic Poza Rica field has a maximum depth of 200 meters. This is an enormous difference,

a new dimension that we of the oil industry accept without trepidation, with the confidence and the optimism acquired over 40 years of experience, and which we hope will soon, very soon, pervade the country as an expression of legitimate pride for all Mexicans.

Exploitation

The production of crude oil and liquid derivatives of gas increased by 27.7 percent from December 1976 to December 1977, that is, by 260,000 barrels daily. The average daily production during the year was 1,085,550 barrels. The increase is mainly due to the Reforma area fields, which produced during the year an average of 647,000 barrels of crude daily, and 735,000 barrels in December.

The average production of natural gas during the year was 2.46 billion cubic feet daily.

Extending the drilling capacity through a contract for maritime drilling we have held for a long time, a management-trade union agreement was signed in July, according to which the administration can sign contracts with private companies to perform land-drilling operations.

These contracts are simple instruments similar to those connected with other projects such as the construction of roads or buildings, where the contractor is at all times under the supervision of the institution's officials and does not participate in any way in the disposal of the end product or in the results of production.

Since December 1976, we have set a level of production designed to reach a volume of 2.250 billion barrels a day of crude oil and liquid derivatives of gas by 1982, an achievement which was already considered attainable based on the known reserves of 11.2 billion barrels. These reserves have increased in a short time to more than originally anticipated; as a result, our initial estimates now appear quite modest.

Through intensive exploitation, the planned production of 2.25 million barrels per day will be fulfilled earlier than 1982, during the course of 1980; this represents an unexpected source of national income which will contribute significantly toward the country's development. Particularly in the energy sector, this income will offer Mexico both resources and time to determine the potentials of hydroelectric, coal, uranium, geothermic sources and others, a project which requires large investments to structure and economically sustain an integral energy policy.

Oil production in Mexico is undergoing a fast and technologically excellent development. The Poza Rica field took 20 years to develop and reach its maximum production of about 150,000 barrels per day, that is, double the entire 1967 production.

In reaching the anticipated level of production in 1980, Mexico will be in a position to decide whether to continue the same rhythm of oil production, or whether production should be increased or decreased; it will then enjoy the enormous advantage of counting on a large income and the ability to project the implementation of a master plan for development in which all sectors will participate.

Refining Process and Petrochemicals

During the last year, our refineries processed 835,550 barrels of crude oil and liquid derivatives of gas per day. This represents a 12.7 percent increase compared to the previous year.

The production of basic petrochemicals reached 4.2 million tons, for a total value of 9.8 billion pesos; compared to the previous year's production, this amounted to a 44 percent increase.

Institutional policy requires that the percentages of excess production should correspond to the national capacity for investments and to the possibility for foreign sales. PEMEX is planning to export 16 percent of its refined oil and 17 percent of its basic petrochemicals by 1982. These percentages are adequate, they do not jeopardize investments and will find good markets.

It is fundamentally important not to labor under any illusions, such as the idea of totally replacing crude oil and gas exports with the products of their transformation or with petrochemicals intended for markets abroad. Volumes in such cases would be massive and their production would require vast investments; furthermore, they could not be absorbed by international markets because of their magnitude.

The program now under way will successfully convert the country from an importer of petrochemical products to a nation of considerable importance in the field of the petrochemical industry.

Moreover, we are planning to stimulate the production of secondary petrochemicals, so as to export products of the highest combined value. This aspect of the industry should be developed at least at the same rate at which the basic petrochemicals industry is growing. The present development of the derivatives sector is not as large, and PEMEX will do its utmost to stimulate it. PEMEX is planning to participate as a minority partner in tripartite associations where its presence would have positive results, with the proviso that the percentages of development stay well within the provisions of the law.

Sales

We wish to be very specific in this report about the oil industry, because we feel it is very important that the people and public opinion be well acquainted with our policies.

Once domestic needs have been amply satisfied, we have outlined an export policy, in this case using the concept of policy in the sense of fitting management, which must address itself to at least three complex and dynamic factors of primary importance.

The first factor--already mentioned--is the magnitude of oil reserves, be they proven, probable or potential. The second is the national ability to invest funds in order to broaden our present structure of production, aiming at creating new jobs. The third factor is the possibility of selling our excess production abroad at a profit.

These three variables depend upon changing circumstances requiring constant shifts in planning and new openings, which must be combined with other variables of a normative nature, the most important of which is to act at all times in the nation's best interest. At an ideological level, this permanent variable is an obligation and an identity: it is nationalism.

Within the fluctuation in prices on world markets and despite the pressures of excessive supplies, we have been able to sell our crude oil at prices higher than those set by large producers; we shall sell our gas only at prices we consider fair.

The total amount of domestic sales was 53 billion pesos, an increase of 37.5 percent over last year, with 83 percent of this amount corresponding to petroleum products and 17 percent to petrochemicals.

PEMEX total exports amounted to 23.4 billion pesos, an increase of 234 percent over 1976. The average volume exported was 206,500 barrels per day, of which 202,000 were crude oil and 4,500 refined oil.

In general, the world price of crude oil varies between \$12 and \$15 per barrel, while refined and industrialized oil products reach domestic markets at a price varying between \$18 and \$25 per barrel; these prices fluctuate according to the various forms of fuel prepared and sold. In Mexico, the set price for these products is \$6.50 per barrel of finished product, an extremely low price directly benefitting domestic consumers and protecting the national economy. PEMEX is thus distributing the profits of its oil operations to the legitimate owners.

In 1977, PEMEX exported crude oil to the U.S., Canada, Spain and Israel.

It should also be pointed out that PEMEX has already proceeded to the sale of initial exports of ammonia to Brazil, Costa Rica, El Salvador and Sweden. Liquid derivatives of gas and refined products were exported to the Dutch Antilles, Belize, Colombia, Ecuador, the U.S., Guatemala and Peru.

A total of 4.8 billion pesos worth of imports supplemented domestic needs, of which 1.2 billion were for oil products and 3.6 billion for basic petrochemicals. Imports of the latter will gradually decrease as our new

Petrochemical installations are completed. The positive balance of trade amounted to 18.6 billion pesos.

During our visit to Europe in November 1977, we met with various groups and discussed our intention to sell our products directly to the public in the different countries under our own Mexican trademarks, either acting alone or in association with state enterprises. We are pleased to announce that we already have some offers which are being duly examined and which, if accepted, will increase our field of action: Mexico will thus derive maximum benefits from an export policy which will yield the largest possible combined amount, the ultimate sale of the product.

Fleet

The Institution's fleet includes 30 units, with a total tonnage of 654,000 tons; the fleet traveled 115,000 nautical miles and transported 105 million barrels of crude oil and various other products. The "18th of March," "Chac," and "Bacab" tankers purchased from Norway were received last year.

National Natural Gas Junction

Our present relation between gas reserves and production is 40 years; it is higher than that for oil, because it was decided that as a first step, a gas pipeline will be built between Cactus, Chiapas and Monterrey, Nuevo Leon. This pipeline will be 1,096 kilometers long and 1.22 meters in diameter (48 inches) between Cactus and San Fernando, Tamaulipas, and 129 kilometers long by 1.07 meters (42 inches) between San Fernando and China, Nuevo Leon, where it will hook up to the pipeline system shooting the gas to the northern part of the country, mainly to Monterrey, Saltillo, Torreon and Chihuahua.

This gas pipeline will make possible the use of the combined gas from the southeastern fields in most of the country's industrial centers; it will promote the establishment of new foci of development and will incorporate the gas coming from a series of fields located in the vicinity of the pipeline.

The construction of the section between Cactus and Monterrey will constitute the first stage of the project and has already been initiated; it will need no compressors around the pipeline, because the pressure of the gas leaving the processing plants in Cactus will be sufficient to propel a volume of 800 million cubic feet (22.7 million cubic meters) per day to domestic markets; this important volume will considerably reinforce the country's energy consumption.

At a later date, whenever Mexico deems it possible, and after domestic needs have been satisfied, the excess natural gas production could be exported. Existing installations could be used for this purpose, since they are already hooked up to the North American system; they have been

in operation for 18 years, since 1957, and as late as last winter, were used to supply 40 to 60 million cubic feet of gas daily to our neighbor. In the event this system proves itself insufficient, it would be possible to build a pipeline branch 1.07 meters (42 inches) in diameter from San Fernando to Reynosa, Tamps., measuring 119 kilometers in length.

The construction of this branch will depend on whether U.S. internal problems in connection with the purchase of natural gas from Mexico at \$2.60 per thousand cubic feet are first solved. We believe that this is a reasonable price for our gas.

To date, an estimated 6.56 billion pesos have been appropriated; a total of 596 kilometers of pipes have been received, of which 220 have been installed, while 150 kilometers have been bent, aligned and soldered. Moreover, a length of 125 kilometers of trenches have been dug. The foregoing represents progress at a rate of 23 percent.

PEMEX is in possession of the necessary government permits to cross rivers and roadways and has settled virtually all questions connected with above-ground work, thus guaranteeing the right of way.

There has been a great deal of speculation over this pipeline, which soon will be viewed as natural as those electricity towers and cables criss-crossing the country from the sources of the Grijalva to the north, which will connect Laguna Verde in Veracruz to El Infiernillo in Balsas and to the thermoelectric plants in the Valle de Mexico, as well as interconnect all installations in order to provide consumers the resource of secure alternatives in the event of outages in some segments of the system. To this effect, the nation has invested vast resources to unify the cycles and to be able to count on an electricity network as efficient as possible. Similarly, if in the future the country will depend in great part on hydrocarbons, at least for the remainder of the century--and this seems to be the general consensus--our network of pipelines, ports, storage facilities and above all, our national gas network, are all urgently needed. The pipeline from Cactus to Monterrey and to the productive areas of Reynosa is part of this network, which will integrate and ensure the supply of gas to the whole country.

Even if the U.S. weren't a possible customer for our natural gas, we still would have to build the national junction to provide energy to our people. The interconnection of the southern and northern natural gas networks, plus the junction with all known oil and natural gas fields, as well as the possibility of supplying natural gas to all cities and future foci of development on the Gulf coast, dictate the construction of this pipeline.

Let not spurious arguments detract from a project that the oil industry, the Mexican industry and the entire country need without further delay. It is very difficult to build: conversely, it is easy to obstruct and even easier to destroy. A mistake may be committed in 10 seconds, but

takes long years to correct, particularly when special interests are affected. The results of 40 years of labor by Mexican workers and technicians deserve the support of the Mexican people. We are therefore confidently asking for such support, with the clear conscience of those who know that they are fulfilling their patriotic duty.

Finances

The 1977 budget amounted to a total of 109.1 billion pesos, of which 60.4 billion went toward operating expenses, 34.9 billion were for investments and 13.8 billion went to settle outstanding debts.

The previous budget's revenues were as follows: 78.3 billion pesos from our own resources, 27.6 billion from foreign investments and 3.2 billion from available funds.

The review of the institution's cash flow projection for the entire 6-year period shows that total revenues will amount to 1.371 trillion pesos, equal to almost 18 times the 1977 revenues, while total operating expenses--besides federal taxes--will amount to 328 billion, only 8 times higher than expenses for the same year. These figures, while difficult to perceive and comprehend at present, will become a common occurrence in the near future.

In other words, while 1977 operating expenses, to the exclusion of federal taxes, represented 53 percent of revenues, the next 6-year period will see the decrease of this rate to only 24 percent, freeing resources that will increase the contribution of PEMEX to the federal budget and toward defraying the total cost of the Institution's new investments for production, up to 354 billion.

It has been said that PEMEX will incur eternal debts because of its investments to increase production. Nothing is farther from the truth: by the end of 1979, our revenues will exceed our expenses, including new investments. We can state with great satisfaction that at the end of the 6-year period, we shall have reduced the Institution's total debt by 20 billion pesos; in other words, we owed 54 billion pesos in 1976, and by 1982, this figure will have decreased to 34 billion.

Once total operating expenses are covered, including federal taxes, we shall have generated internal savings estimated at 623 billion pesos for this 6-year period; this will be sufficient to reduce PEMEX' debt by 20 billion, cover the Institution's planned investments up to 354 billion pesos, and make the balance of 249 billion pesos available to support industrial development and the welfare of the masses, using as an instrument to this effect the National Employment Fund; the establishment of this fund was decreed by the government, as announced last Wednesday by the secretary of patrimony and industrial development.

All the above, in addition to the punctual payment of taxes, constitute still another way in which PEMEX is handing the profits of the oil industry back to its rightful owner, the people of Mexico.

Supply

To implement the operational, maintenance and development programs for the new installations, 33,000 orders were placed during the year, for a total of 34.6 billion pesos. By transferring materials between the Institution's various warehouses, we were successful in avoiding repeat purchases for a total of 710 million pesos.

Construction

A total of 20.9 billion pesos were invested in various construction projects, of which 94 were completed at a cost of 7.8 billion pesos; the rest went for 214 projects now under way. The most important among these are construction projects for pipelines and above-ground exploitation structures; recuperation plants and processing of hydrocarbons in the Reforma and Poza Rica area; additional refining installations in Tula, as well as on-going construction of the Cadereyta and Salina Cruz refineries and the La Cangrejera petrochemical complex.

Environmental Protection

We firmly intend to solve pollution problems. We are pleased to report that all new plants possess the necessary equipment to protect the environment, and that those built in the past without regard to such measures, or possessing inadequate systems, are undergoing a corrective process. Moreover, rehabilitation projects are under way in those localities which had been neglected in the past for various reasons.

Air and water pollution in the vicinity of industrial centers are being systematically measured in order to determine the seriousness of the problem and its effects, and to plan controlling measures. In the event accidental spillages of oil or derivatives may occur, we possess the necessary resources to control them and rehabilitate affected areas.

In maritime terminals, we have proceeded to modernize our installations for the treatment of ballast water, being thus able to implement the regulations and the international agreements signed by PEMEX in connection with marine environmental protection.

General Administration

PEMEX has gradually perfected pay scales while improving the system guaranteeing maximum employment security; the Institution has installed accident-preventing devices, provided mortgage financing to adequately house workers and their families, improved medical and hospital services for the welfare of the oil industry's personnel and established schools to raise the educational level of the workers and their families, as well as that of the other members of the community.

In this connection, we should like to point out the aspects of professional training, industrial security, accident and disease prevention, healthy and adequate housing, preventive medicine and the promotion of cultural and recreational activities. To improve the health of workers and their dependents has been a constant concern of this Institution. Accordingly, great emphasis has been placed on the training of medical personnel through postgraduate education and courses offered to residents in various specialties. In the same context, various hospitals, clinics and health centers have either been already built or are in the process of being completed wherever required by large concentrations of workers.

In accordance with contractual agreements, we have been providing assistance for the purchase, construction and improvement of housing. To this effect, a total of 81 million pesos has been set aside.

In order to solve housing needs and the problems faced by PEMEX in its zones of operation and development, it was decided to restructure the Commission on Housing Construction into the Housing Program Coordinating Commission, aimed at establishing the technical, administrative and financial means to solve housing problems. This organism coordinates and controls the implementation of such programs and provides advisory services to the trade union's National Fund for Housing Construction and to settlers' associations. The commission also coordinates the activities between PEMEX and official entities--especially state governments and the Human Settlement and Public Works secretariat--to provide adequate housing to workers and their families.

An agreement with the government of Oaxaca state was signed to control speculation in the Salina Cruz area where 500 housing units are being erected. Another agreement is in the process of being signed with the state of Veracruz and we hope to reach similar agreements with those states where we have zones of rapid development.

Through the trade union's executive committee, another program to build 500 housing units in Villahermosa, Tabasco has been initiated; this is the first stage of a program which will bring considerable relief to the problems besetting this area.

We were able to reduce the frequency of accidents to a minimum, thus improving production and stamping out absenteeism. PEMEX security and hygiene regulations were revised and brought up to date.

During the period in question, we have substantially increased training activities for the Institution's personnel through the Mexican Oil Institute: a total of 1,586 basic and advanced courses were offered, a 30 per cent increase over the previous year. These courses trained 21,723 workers in 30 specialties.

A total of 121 million pesos were paid to third parties for damages and temporary occupation of their property. A sum of 35 million pesos was

expended for the acquisition of land for expansion and development purposes, and 2 million pesos were paid in expropriation procedures.

PEMEX is not a landowner; similarly, it is not in competition with farmers for the use of land. For instance, the Cactus-Monterrey gas pipeline will only occupy a strip of land 25 meters wide along its entire length, and of all the land areas affected, only 20 percent of it will be occupied permanently, with the rest continuing to be used for the same agricultural and cattle-raising activities as before.

In order to provide a timely solution to any problems that may occur because of the occupation of, or damages to properties the Institution needs for its development, special attention has been paid to all individuals presenting any claims through the use of professional personnel, and to this effect, various offices have been established in Jalapa, Veracruz and Villahermosa, Tabasco.

Similarly, permanent tariffs for the reimbursement of damages incurred have already been set, and in many instances, officials at the highest levels have dealt directly with these questions, providing prompt solutions.

Mexican Petroleum Institute

The Mexican Petroleum Institute has considerably increased its activities, and in order to offer maximum cooperation to PEMEX has adjusted its plans to coincide with the priorities established by this organism. It has also provided services to the petrochemical industry and some Latin American oil companies.

In the areas of geological and oil engineering, the Mexican Petroleum Institute has initiated a process dealing with the periodical verification of proven, probably and potential reserves, as estimated by PEMEX experts.

1978 program

Some of the objectives of our plan of operations for the present year are the drilling of 114 exploratory wells--15 of which will be marine, 4 lake wells and 95 ground wells--as well as of 360 wells to expand already producing fields, and 23 wells to inject water for secondary recuperation.

Production of crude oil and liquid derivatives of gas will increase from 1.2 million produced in December 1977 to 1.6 million in December 1978. Gas output will be 2,560 billion cubic feet per day.

The Institution's refineries will process 870,300 barrels of crude and 135,500 of liquid derivatives of gas per day, for a total of 998,000 barrels per day of refined products. A total of 17,000 tons of petrochemical products per day will be processed, corresponding to a total annual volume of 6.2 million tons.

Another important development is the increase in recreational and cultural activities to benefit all of us who form the nucleus of the oil industry's work force.

In the process of expanding such a powerful and promising industry, it is necessary, at times, to occupy and also expropriate various structures in order to bring progress to the farthest confines of our Republic with the firm intention of paying all indemnizations for property damages as soon as possible and in the most adequate way. Furthermore, during the period we are reviewing, PEMEX has built various highways and access roads, facilitating communications that benefit numerous work centers.

Worker-Management Relations

We feel legitimately proud of the fact that a Mexican Republic Oil Industry Trade Union exists in Mexico; this is an organization which played a decisive role in the nationalization which occurred 40 years ago and whose rightful demands constitute a model for the workers' wish to acquire social and human dignity. When the workers' gains occur within the process of the specific duties of each industry, they do not injure production, but actually promote it.

Each country has its own concept of productivity, which is in agreement with its geopolitical realities. In our view, productivity is directly related to the economic system's efficiency in fostering general welfare. In other words, to increase the figures of the gross internal production without at the same time ensuring the access to goods and services of the majority of the people is not enough.

The type of efficiency that attains the maximum output of goods and services at the least cost is the purely economic aspect of productivity; the subsequent distribution of benefits is the social aspect of productivity. These are not incompatible: the art and the political significance of productivity is knowing how to combine them.

Accordingly, we have declared 1978 the "PEMEX Year for Productivity" within the "Alliance for Production" fostered by the President of the Republic. To this effect, management and trade union have set up committees on productivity in the Institution's work centers, because this task will be realized through the participation of all of us who have the honor of serving the nation through PEMEX.

The collective contract with the Oil Industry Workers Trade Union of the Republic of Mexico was revised in an atmosphere of cordiality and mutual respect; this contract will govern the relations between workers and management during the period 1977-1979.

This revision resulted in the improvement of the workers' condition, both from a salary standpoint and from the fact that various services were provided, which are aimed at raising the workers' and their families' standard of living.

The total budget is estimated to be 180.1 billion pesos, of which 84 billion will be for operating expenses, 70 billion for investments and 26.1 billion to settle outstanding debts; this last figure includes the payment of 17,490 billion pesos of revolving credits, to be contracted and paid during the period in question.

Income toward this budget will be derived from 112.8 billion pesos of our own funds and 67.7 billion of foreign financing, including revolving credits.

Income from domestic sales is estimated at 61.7 billion pesos; income from exports will amount to 47.4 billion, and 3.7 billion will come from other sources, for a total of 112.8 billion pesos.

At present, we are exporting crude oil at a rate of 280,000 barrels per day, and we are hoping to increase this figure to more than 500,000 barrels per day at the end of this year.

The 1978 goals are doubtlessly the most ambitious in the history of our oil industry, and we feel sure we shall exceed them in the near future.

Through 40 years of constant labor and efforts, we have successfully overcome serious obstacles and satisfied urgent needs: industrial concepts have undergone an extraordinary evolutionary process. It is no empty claim but indeed a true and worthy statement to affirm that our engineers and qualified workers are comparable to the best in the world.

Energy Policy in the Field of Oil

Energy sources are the world's vital concern. All nations, whether rich in such resources or not, are attempting to define policies and set up plans to harmonize and integrate political aspects, economic strategies and international events.

Because of the complexity of the problem, its solution bears no relation either to theorizing fantasy or technical rigidity: indeed it needs a reflective, rational and dynamic analysis of realities to provide the orientation for future action and make pragmatic plans for the future.

Conscious of this vital responsibility, the government of the Republic had already, upon assuming its constitutional mandate, acted to execute the necessary studies that would enable it to define its energy policy from the beginning of its term, setting priorities and goals in various fields and preparing a program to obtain optimum benefits from oil, since this resource happens to be the backbone of the Mexican energy patrimony.

Nevertheless, the technical complexity of the topic, the lack of information on the subject, or even the propagation of some incorrect criteria by groups of individuals opposed to the national interest, contributed to

a misunderstanding by some segments of public opinion of the importance of President Lopez-Portillo's statements at the beginning of his term on the policy to be followed in the field of energy. At the time, these statements had been given wide publicity and had received the timely support and ratification of the most representatives of national forums; this is why this policy has remained essentially firm, undergoing only those modifications dictated by a rational flexibility.

Oil is not the only energy source the country possesses, but it is the most important of all those that provide the wherewithal for national development. Thus we cannot deny that it has political repercussions, which we are therefore ready to accept.

Now, a certain policy may be used to build something that does not exist, or to manage something already established. To generate energy, the country is consuming an 85 percent proportion of hydrocarbons, because we have not established a sufficiently diversified infrastructure. That is precisely why an eventual energy policy will be aimed at developing the diversification of alternate sources. Naturally, PEMEX has no right to either establish a national energy policy or legislate on the use of the funds generated by its operations, which are entirely devoted to the country's welfare.

As part of the great Mexican family, we intend to follow scrupulously the policy which will be established by the elected representatives of the people; however, we are dependent at all times on our function and our responsibilities. More important still, we shall ask for a proper place in any future energy policy.

A fundamental premise for an effective policy is that it should always be realistic, and the analysis of the energy realities of the country has shown in the past--and still does today--that oil plays a preponderant role in the complete picture of the country's energy sources, that the lion's share of the energy consumption is derived from hydrocarbons, and that, moreover, hydrocarbons offer immediate benefits for rapid development.

Consequently, we have come to the conclusion that oil should be a central pivot in the field of energy.

Fortunately for Mexico, our oil reserves were successfully determined and increased by this government. For a variety of reasons too tedious to enumerate, the same is not true of uranium, coal and other natural resources reserves. This fact also dictates that oil should assume the lateral function of assisting in the development of other energy sources, and should continue being the backbone of electric energy.

The elaboration of an energy policy would be meaningless if it only encompasses past deeds. In order that it be effective, it should definitely be complemented by a vision of the social and historic situation within which it is being applied.

When Lopez Castillo assumed the presidency, it was obvious that the economic crisis under which the country was laboring was at its apogee; in order to overcome it, it was necessary to use that source of wealth likely to produce immediate returns: only thus would it be possible to avoid the risk of increasing the economic sacrifice of the popular classes which were already bearing most of the burden from the repercussions of the crisis.

As a result, a program for the oil industry was elaborated, aimed at generating funds for domestic consumption, which would promote the agricultural and industrial development of our country.

A plan of action using these elements was set up, taking account of the priorities to satisfy exclusively national interests.

Once oil reserves were determined--as was reported previously, they are likely to increase--it was possible to set up the basic criteria to promote the development of the oil industry: 1) satisfaction of short-term, intermediate and long-term internal demand; 2) rational use and integral exploitation of all hydrocarbons, and 3) export of excess production to finance attainable prices in domestic consumption and obtain the economic means necessary for the country's general development, which is the sole and fundamental path to economic independence and national prosperity.

The sum total of all this gave rise to the program announced on 22 December 1976, which is being implemented on time and even earlier, if possible. We have set for ourselves a production goal of 2.25 million barrels a day, to be reached, as we already mentioned, not in 1982, but by 1980. We believe that at that point, the program must be reviewed, and public opinion considered, to define the limits of production. We had labeled this the 1982 Platform of Production, and we are now renaming it the 1980 Platform of Production with a deep feeling of pride.

The management of this wealth must be conducted, in form as well as in essence, in rigorous compliance with our judicial process, our national values and our patriotic resolve to give proof of efficiency. In giving priority to internal demand, we are consolidating the country's autonomous development. It is clear, of course, that if we use oil derivatives in rational fashion--without burning them in the atmosphere, like gas--the country's energy resources will be effectively enhanced; lastly, it is evident that, if we can guarantee excess production while still ensuring ample proven, probable and potential reserves to cover domestic demand, we are fighting a decisive battle to reaffirm our economic independence and defend our national sovereignty.

Since 1938, Mexico has variously been an importer or an exporter of gas and oil, without jeopardizing our sovereignty. Nevertheless, an important consideration when exporting is to sell our products at the price we establish and to the purchaser of our choice who will pay it, and to use the foreign currency generated by such exports to combat our ancestral

ills: unemployment and poverty among large segments of the population, as was recently pointed out by attorney David Ibarra, secretary of finance and public credit, at the National Banking Convention. These are the objectives for which we are fighting in defense of national self-determination.

As can be seen clearly, the energy policy established by the government was in no way a plan of action hastily improvised because of anxious pressures and fear of a dramatic economic recession; it was the result of a reaffirmation of national values, of rigorous compliance with constitutional principles and an exacting analysis of facts and circumstances. This process led to a number of conclusions which have been implemented by the federal government in a singularly visionary and patriotic way.

PEMEX, the oil industry belonging to the Mexican people, will continue performing its functions; it will continue to increase deftly both reserves and production; it will continue to add new installations to reach a level of production of 2.25 million barrels per day; it will continue to transfer financial resources to its rightful owner, the Mexican people, through a price policy, and will not cease laying the foundations for the export policy which will contribute foreign exchange resources to the national economy.

Mister President: the magnitude of the country's hydrocarbon reserves and 40 years of institutional experience in PEMEX have determined our present position: think big toward towering achievements in favor of Mexico's greatness.

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